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The evaluation of concentration of calprotectin, in pleural fluid with causes of exudative pleural effusions

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Background: Nowadays, routine invasive techniques to diagnose the causes of exudative pleural effusion are going to be replaced by new noninvasive methods such as biomarkers which, with the same diagnostic accuracy, can confirm malignant situations at least in a group of cases which do not need more invasive means.

Materials & Methods: In this descriptive-analytical and case-control study, the calprotectin concentrations in pleural fluid was evaluated in 90 patients with exudative pleural effusion, and compared among two groups including 34 patients with malignant pleural effusion (MPE) and 56 patients with benign pleural effusion (BPE). All patients underwent examination and the necessary laboratory tests were done and closed pleural biopsy was performed if necessary. Collected data were analyzed by SPSS-21 statistical software and chi-square, t-test, ANOVA and logistic regression analysis.

Results: Calprotectin concentration was (107.72 ± 10.59) in patients with malignant causes and (114.42 ± 23.95) in others. Calprotectin concentration was (122.34 ± 27.03) in patient with TB. The results showed that this difference was statistically significant ($p=0.05$) and calprotectin rate, is lower in the malignant pleural effusion. Especially, when the results were compared with patients with TB, this difference was more prominent ($p=0.01$).

Discussion & Conclusion: According to higher levels of calprotectin in tuberculous pleural effusions, maybe, we can achieve important results in differentiating between malignant and non-malignant pleural exudate, without the need for invasive procedures, by putting together the clinical symptoms, the calprotectin concentration in pleural fluid and pleural fluid cytology results

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